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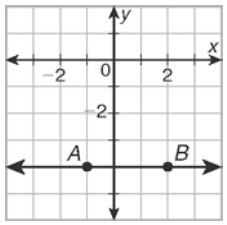
LESSON 3-5

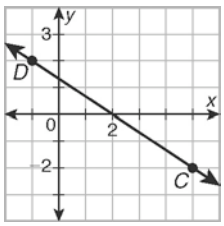
Slopes of Lines

Determine the slope of each line.

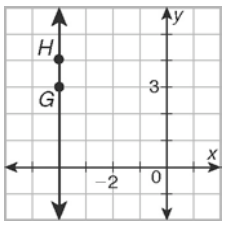
1.



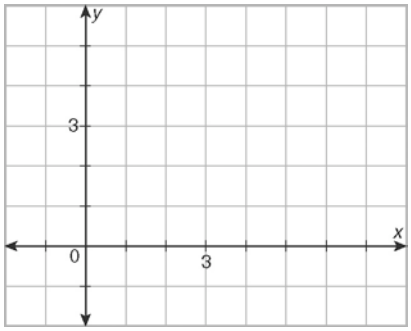
2.



3.

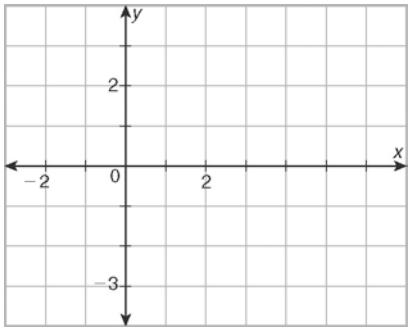


Graph each pair of lines. Use slopes to determine whether the lines are parallel, perpendicular, or neither.



4. $\overleftrightarrow{IJ}$ and $\overleftrightarrow{KL}$ for *I*(1, 0), *J*(5, 3), *K*(6, –1), and *L*(0, 2)

5. $\overleftrightarrow{PQ}$ and $\overleftrightarrow{RS}$ for *P*(5, 1), *Q*(–1, –1), *R*(2, 1), and *S*(3, –2)



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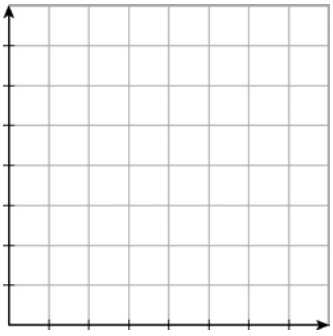
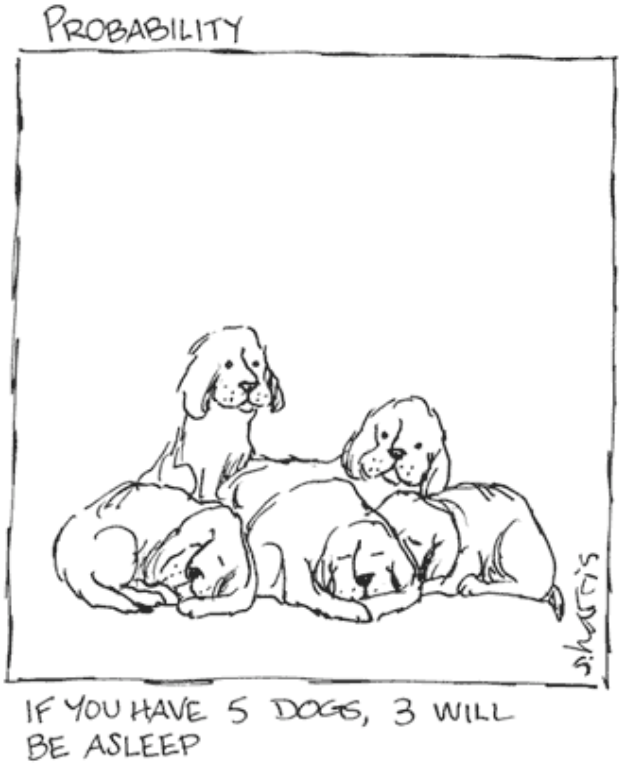
6.
At a ski resort, the different ski runs down the mountain are color-coded according to difficulty. Green is easy, blue is medium, and black is hard. Assume that the ski runs below are rated only according to their slope (steeper is harder) and that there is one green, one blue, and one black run. Assign a color to each ski run.

Emerald $\left(m = \frac{4}{7} \right)$ Diamond $\left(m = \frac{5}{4} \right)$ Ruby $\left(m = \frac{5}{8} \right)$

7. Mara is jogging at a constant speed. She jogs 2 miles in 14 minutes. After minutes, she has jogged 5 miles. Graph the line represented in the information. Find and interpret the slope of the line.





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8._____

A hang glider who started at 7:55 A.M. has traveled at a constant speed as shown in the table.

Time	Distance Traveled
8:00 A.M.	2 mi
8:30 A.M.	14 mi

If the line that represents the hang glider's distance traveled is graphed, which is a true interpretation of the slope?

A The hang glider is traveling at an average speed of 24 miles per hour.

B The hang glider is traveling at an average speed of 16 miles per hour.

C The hang glider is traveling at an average speed of 12 miles per minute.

D The hang glider is traveling at an average speed of 7 miles per minute.

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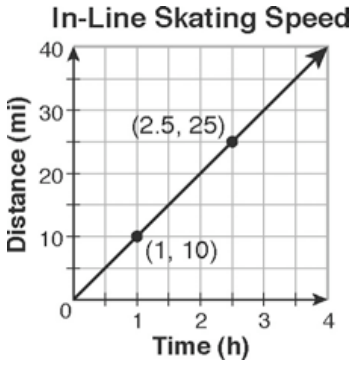
9. _____

The line represents the distance traveled by an in-line skater traveling at a constant speed. What is the rate of change represented in the graph?

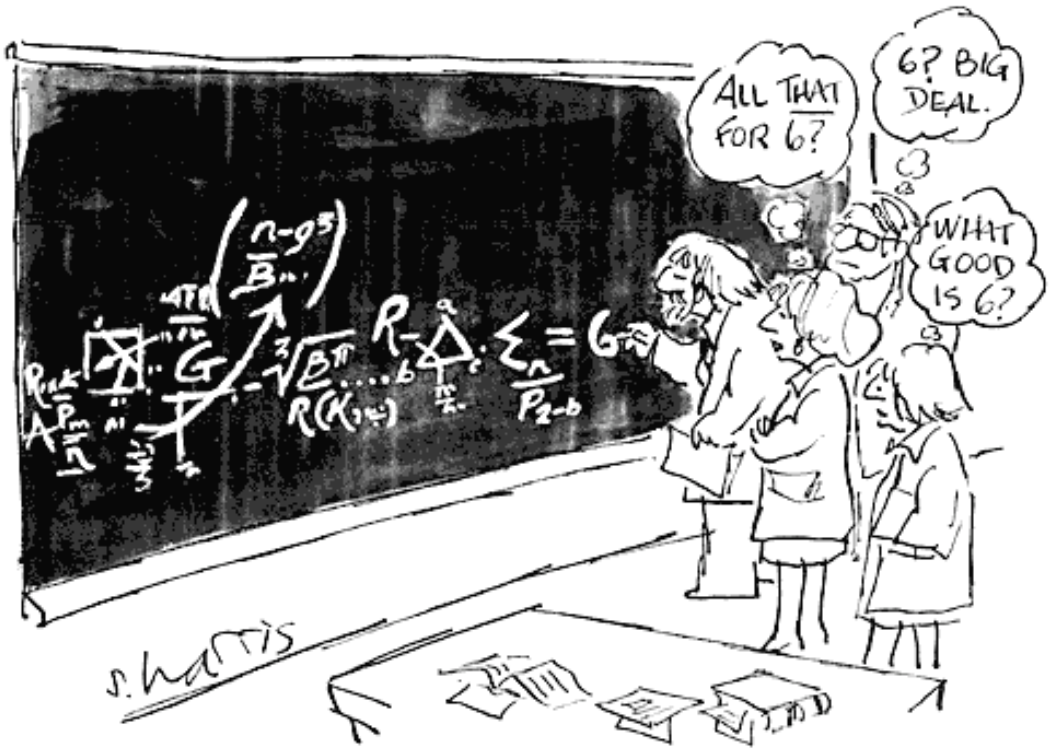


F 25 mi/h

G 15 mi/h

H 10 mi/h

J 0.1 mi/h



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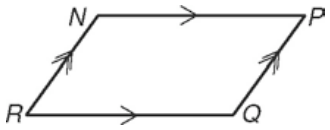
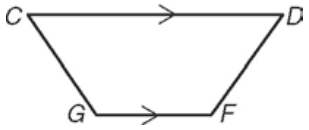
Quadrilateral	Properties	Models
parallelogram	Both pairs of opposite sides are parallel.	
trapezoid	Exactly one pair of opposite sides is parallel.	

Determine whether each quadrilateral with the given vertices is a parallelogram, a trapezoid, or neither. Explain your reasoning.

10. $A(-9, -1)$, $B(-5, 2)$, $C(6, 2)$, $D(-10, -10)$

11. $R(-14, 8)$, $S(11, -7)$, $T(2, 11)$, $V(0, 7)$

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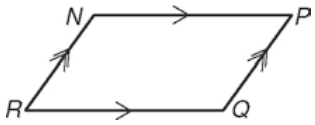
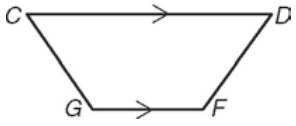
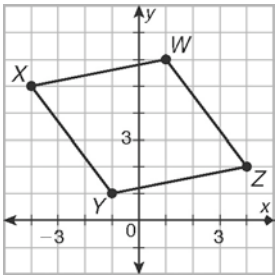
Quadrilateral	Properties	Models
parallelogram	Both pairs of opposite sides are parallel.	
trapezoid	Exactly one pair of opposite sides is parallel.	

12. Determine whether each quadrilateral with the given vertices is a parallelogram, a trapezoid, or neither. Explain your reasoning. $J(4, 4)$, $K(2, 1)$, $L(-3, 2)$, $M(-1, 5)$

13. If a quadrilateral is a parallelogram and the diagonals are perpendicular, then the figure is a rhombus. Determine whether quadrilateral $WXYZ$ is a rhombus. Explain.



14.

Critical Thinking The slope of $\overline{AB}$ is greater than 0 and less than 1. Write an inequality for the slope of a line perpendicular to $\overleftrightarrow{AB}$.

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15.

Write About It Two cars are driving at the same speed. What is true about the lines that represent the distance traveled by each car at a given time?